

SAFE Analysis of NHTSA & EPA's Notice of Proposed Rulemaking for Fuel Economy Standards Implications for National Security, Economic Growth, Safety, Vehicle Prices, and Oil Demand

The Department of Transportation's National Highway Traffic Safety Administration (NHTSA) and the Environmental Protection Agency (EPA) released on August 2, 2018 a joint Notice of Proposed Rulemaking (NPRM) outlining proposed changes to the current federal fuel economy regulations promulgated by the Obama administration.¹ Through this proposal, the Trump administration seeks to advance its goal of energy dominance while meeting the needs of consumers and the auto sector. This document outlines SAFE's preliminary response to the NPRM in advance of a more detailed analysis now being prepared by the organization for submission during the 60-day public comment period.

SAFE Recommendation: The opportunity to modernize the fuel economy standards, spur innovation in the industry, and advance the administration's energy dominance agenda has never been greater. We believe this opportunity includes a few elements that key stakeholders can agree to including: 1) an increase of fuel economy standards by at least two percent per year during the model years in question, 2) a program that is national in scope with a path toward future standards (e.g., through 2030), 3) multiplier credits for all types of alternative fuels to offer fuel choice to consumers, and 4) an updated off-cycle credit program that incentivizes adoption of self-driving and advanced driver assistance features that will save both lives and fuel.

Key Points

- **Military Cost of Oil:** Because national and energy security form the cornerstone of the fuel economy program's statutory foundation, the regulations should account for the cost incurred by the military to protect the flow of oil. EPA and NHTSA should update their cost-benefit analysis methodology to account for the burden to the military of securing the global free flow of oil, and operations intended to stabilize oil-producing regions. SAFE's Energy Security Leadership Council (ESLC)² knows that the national security cost of oil dependence is substantially higher than zero and should be reflected in this program. "If we can reduce our dependence on oil, we could reduce our presence in the Gulf and use the funds for other critical military priorities, like cybersecurity or hypersonic weapons," said General Duncan McNabb, the former commander of the U.S. Transportation Command and a member of SAFE's ESLC. "The same funds could support different security priorities. We would make different choices, that would make us safer and more secure."
- **Safety:** Previous agency analysis could undermine the findings in the NPRM that freezing fuel economy standards will save 12,000 lives.³ Moreover, the emerging data on self-driving and

¹ Department of Transportation and the Environmental Protection Agency: "The Safer Affordable Fuel-Efficient Vehicles Rule for Model Years 2021-2016 Passenger Cars and Light Trucks," (Aug. 2, 2018) (Proposed Rule).

² Note: See description of the Energy Security Leadership Council at secureenergy.org/about/energy-security-leadership-council/.

³ Proposed Rule at 2.

driver-assist technologies indicate those technologies will save both lives and fuel.⁴ Maximizing the deployment of these emerging technologies will not only improve safety and efficiency but also end the false choice that fuel economy must come at the expense of safety.

- **Off-cycle Credit System:** The program could accelerate the adoption of advanced driver-assist, congestion mitigation, and self-driving technologies that serve the dual-purpose of saving lives and fuel by leveraging EPA's off-cycle credit program. Initial findings indicate that deploying existing driver-assist features could save nearly 10,000 lives annually and reduce system-wide fuel consumption by up to 18-25 percent.⁵
- **Cost of Vehicles:** Price must be a consideration when adding technology to vehicles; fuel economy technologies are no different. This regulatory review provides the opportunity to ensure that the fuel economy program does not become a significant driver of vehicle price increases in the future. The primary drivers in the recent increase in vehicle price have been a shift to larger, more expensive vehicles;⁶ expanded lending terms which allow consumers to afford more expensive vehicles;⁷ and increases in amenity packages that consumers value,⁸ not fuel economy.
- **Oil Security and Energy Dominance⁹:** The NPRM states that the preferred option outlined in the proposed rulemaking will increase U.S. gasoline demand by 500,000 barrels per day through the early 2030s.¹⁰ EPA analysis has concluded that any reduction in gasoline consumption leads to an almost equivalent decline in imported petroleum.¹¹ Just as reducing demand for gasoline decreases imports, increasing the amount of fuel we consume through less stringent fuel economy standards would increase imports, moving the country further away from its goal of energy dominance. Higher demand ensures that the U.S. remains tethered to a volatile global oil market dominated by countries that share neither our values nor our interests. Reducing consumption allows the U.S. to pursue its energy dominance goals by maximizing the value of American oil production flowing to the international markets. This production reduces the ability of OPEC to manipulate oil prices and provides the country and world with more oil from stable geographic areas.
- **Oil Prices:** The NPRM asserts that oil prices will remain low through 2050.¹² Price projections have historically been incredibly inaccurate given the volatility of the oil markets. Moreover, there is

⁴ See, e.g., NHTSA: "Automated Driving Systems 2.0: A Vision for Safety," September 2017, at i; and Fleet Owner: "Case Study: Dish Saves Fuel with Mobileye Technology," May 6, 2016.

⁵ Boston Consulting Group Inc. and Motor & Equipment Manufacturers Association: "A Roadmap to Safer Driving through Advanced Driver Assistance Systems," at 2 (2015), available at www.mema.org/sites/default/files/MEMA%20BCG%20ADAS%20Report.pdf; and SAFE estimates based on independent fuel efficiency modeling conducted by Air Improvement Resource, Inc.

⁶ SAFE analysis based on data from Edmunds and U.S. Bureau of Economic Analysis.

⁷ See, e.g., Experian Automotive: "State of the Automotive Finance Market Q1 2018."

⁸ "New Vehicle Prices Climb to All-Time High in December," Edmunds, January 3, 2018, <https://www.edmunds.com/about/press/new-vehicle-prices-climb-to-all-time-high-in-december.html>

⁹ Note: Energy Dominance is an evolving term that incorporates increased domestic production and freedom from the vagaries of global oil market manipulation. According to Energy Secretary Rick Perry, "An energy dominant America means self-reliant. It means a secure nation, free from the geopolitical turmoil of other nations who seek to use energy as an economic weapon." (See White House Press Briefing by Secretary of Energy Rick Perry and Principal Deputy Press Secretary Sarah Sanders. June 27, 2018.) And for additional treatment of the term also see Secretary of Energy Rick Perry, "True energy independence is finally within our grasp." CNBC. July 29, 2018.

¹⁰ Proposed Rule at 2.

¹¹ Note: The approximate pass through was 0.9.

¹² Proposed Rule at 21.

evidence that historic volatility and market interference will continue, and perhaps accelerate, through 2050.¹³ U.S. policy should be designed to counteract those effects.

- **Alternative Fuel Vehicles:** Because the transportation sector is so dependent on petroleum for its energy (92 percent),¹⁴ energy dominance will ultimately require greater competition between, and diversity of, transportation fuels. Electric vehicles (EVs), fueled by electricity produced by domestic coal, nuclear, renewables, and natural gas as well as hydrogen or natural gas vehicles, create a path toward that future while maximizing the use of domestic resources. When coupled with the emerging self-driving technologies, electrification and other advanced fuels can be a strong first step toward creating real competition in the transportation fuel marketplace. Moreover, well-designed fuel economy standards can support this evolution without requiring additional government subsidies.
- **Regulatory Certainty:** Automakers face significant uncertainty and costs without a single national fuel economy standard. The risk of having to build cars that meet separate California and federal standards would create enormous compliance hurdles and damage the competitiveness of U.S. automakers. There are also risks associated with the need to spend years navigating legal challenges associated with a differentiated standard. That risk is magnified in that automakers will not have clarity regarding where to make long-term business investments, perhaps for several years. So much regulatory and legal uncertainty leads to inefficient product development cycles and, ultimately, higher prices for consumers. The ability of stakeholders to reach agreement in recent years has minimized regulatory risk and legal uncertainty and has contributed to the growth of the domestic auto industry. Redoubling efforts to find common ground again would strengthen automakers, support job creation in the auto industry, and lower costs for consumers, while making safer cars that cost less.
- **Maximum Feasibility:** The NPRM's preferred scenario would freeze standards in 2020, which, in effect, suggests that the regulators believe that automakers cannot produce more efficient cars cost effectively. We believe that given the period of transformative innovation that the auto industry is currently undergoing, automakers can cost-effectively produce more efficient cars.

I. Military Costs of Protecting Global Oil Supply

In evaluating the U.S. military cost to protect global oil supplies, NHTSA uses a 12 cent-per-gallon cost for its sensitivity analysis, but does not include this number as input for determining the rule's overall cost effectiveness.¹⁵ In SAFE's view, this is a significant omission. A forthcoming literature review conducted by SAFE finds that an average of \$80-82 billion, or approximately 16 percent of the (roughly \$500 billion) U.S. base defense budget, is spent every year on protecting the worldwide free flow of oil.¹⁶ If one spreads this out over the 19.8 million barrels of oil consumed daily in the United States in 2017, the implicit subsidy for all petroleum consumers is approximately \$11.25 per barrel of crude oil. If the Overseas Contingency Operations (OCO) funds¹⁷ are included, this cost rises to over \$13 per barrel. "\$82 billion is

¹³ See Robert McNally: "Crude Volatility: The History and the Future of Boom-Bust Oil Prices," Columbia University Press (2017) ("Crude Volatility").

¹⁴ SAFE analysis based on data from EIA.

¹⁵ NHTSA: "Final Regulatory Impact Analysis for Corporate Average Fuel Economy for MY 2017-MY 2025 Passenger Cars and Light Trucks," P. 901.

¹⁶ SAFE: "The Military Cost of Defending the Global Petroleum Supply." Publication forthcoming.

¹⁷ Note: OCO funding was originally used to pay for direct Iraq War expenditures, but it later was used for a wide range of federal budget expenses connected to overseas operations including humanitarian assistance in the Middle

fairly conservative and does not include the additional cost for defense of the oil and that freedom of the seas,” says General McNabb in interview with SAFE. “The benefit to the United States is the stability that allows for prosperity,” he said. According to ESLC member and former Secretary of the Navy John F. Lehman “more than half the Defense budget is for the security of Persian Gulf oil.” And “defending Persian Gulf oil is a major distraction from existential defense issues. Oil dependency complicates the military equation beyond our comprehension.” Moreover, if the long-term, full economic costs of fighting wars in the Middle East are included, the true costs “...may well be in the range of \$4 to \$6 trillion, or even higher, once the long-term budgetary and economic costs are factored in.”¹⁸ This equates to more than \$30 per barrel of crude oil.

Reducing oil use in the transportation sector can shift U.S. military priorities toward other critical strategic threats. “If we reduced our oil consumption by half, [the United States military] would act differently,” says ESLC member Admiral Dennis C. Blair, the former Director of National Intelligence and Commander in Chief of the U.S. Pacific Command. “These are not small, incremental gains. You would generate huge savings.”

II. Oil Market and Price Assumptions

The NPRM states that oil prices will remain low through 2050, mitigating the need for fuel economy increases to insulate Americans from oil price volatility.¹⁹

Neither current market dynamics nor historical precedent offer any reason to believe that oil prices will remain low and stable through 2050.²⁰

- Upstream oil investment is approximately half of what it was in 2014,²¹ even as the observable decline rates for U.S. fields have increased substantially both from past experience and from the global average²² and global demand continues to increase. According to data from Rystad Energy, decline rates from non-shale fields in non-OPEC countries has doubled since 2014.²³

East and North Africa crisis response, and embassy security among other needs abroad. However, the bulk of the largest earlier expenses and a continuing part of current expenditures continue to be related to infrastructure and coalition support for operations in Iraq and Afghanistan. See the annual U.S. Department of Defense Fiscal Year Budget Requests beginning in 2002.

¹⁸ See Linda Bilmes and Joseph Stiglitz: “Estimating the Costs of War: Methodological Issues, with Applications to Iraq and Afghanistan.” In Michelle R. Garfinkel and Stergios Skaperdas (eds.), *The Oxford Handbook of the Economics of Peace and Conflict*. 2012.

¹⁹ Proposed Rule at 180.

²⁰ See *Crude Volatility*, op. cit.

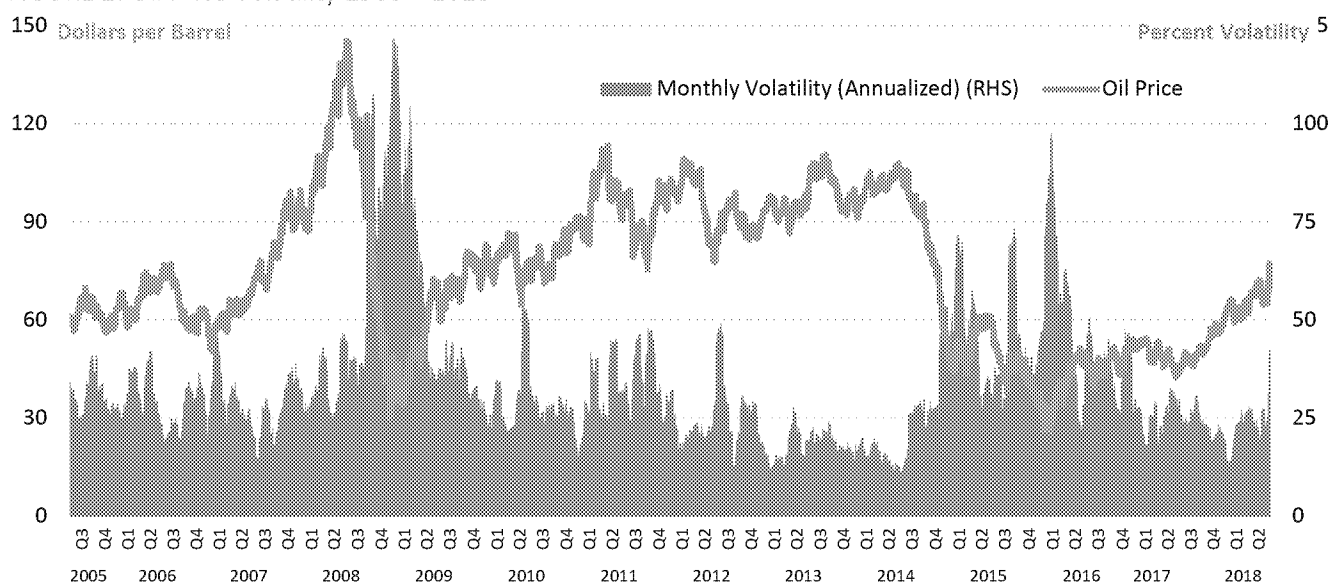
²¹ See Bloomberg Intelligence Upstream Capex Estimates. Robert Tuttle: “All That New Shale Oil May Not Be Enough as Big Discoveries Drop.” Bloomberg. Dec. 27, 2017, <https://www.bloomberg.com/news/articles/2017-12-27/all-that-new-shale-oil-may-not-be-enough-as-big-discoveries-drop>

²² Compare EIA, “Annual Energy Outlook,” Oil and Gas Supply Module” April 2018, page 11 with IEA. “World Energy Outlook, 2016.” November 2016. Pages 146-148.

²³ Sarah Kent and Georgi Kantchev: “As Oil Industry Recovers from a Glut, a Supply Crunch May be Looming.” *The Wall Street Journal*. July 28, 2018. <https://www.wsj.com/articles/as-oil-industry-recovers-from-a-glut-a-supply-crunch-might-be-looming-1532775605>

- Due to declining upstream investment and increasing consumption, a price response can be expected. Projections from Goldman Sachs, Bank of America, RBC Capital Markets, and others predict a return to \$100 per barrel, likely within the next 18 months.²⁴
- Significant volatility remains in the market. As the chart below indicates, oil prices are, by nature, characterized by boom-bust volatility and prices have not been stable for a decade, let alone 30 years, in recent history (see Figure 2).
- A major factor in this enduring volatility is geopolitical risk: Current flashpoints, including Venezuela’s slide into economic chaos, ongoing tensions in the Middle East, and frequent outages in Libyan production as oil facilities are attacked, increase the risk of high and volatile prices.

FIGURE 2: Oil Price Volatility 1988 – 2018



Source: SAFE analysis based on data from EIA

The American economy remains vulnerable to oil price volatility. SAFE analysis, based on IHS metrics, shows that while the extent of economic damage would depend both on the size and duration of the price increase and on how quickly prices rise, a sudden and enduring \$50-per-barrel oil price increase would likely cause, at minimum over two years, GDP to be \$452 billion lower, inflation to be 2 percent higher, real disposable income per capita to decline by almost \$1,000, 1.4 million fewer vehicles to be sold, and two million fewer workers to be employed.²⁵ Such sharp rises are not uncommon: Brent crude was priced at \$46.37 in May 2017, but jumped to over \$74 by May 2018, and a sustained runup in prices in the coming years is entirely possible.

III. Response to Concerns of Compromised Roadway Safety from Lightweighting Vehicles

In response to the administration’s assessment that lightweighting vehicles is detrimental to the safety of road users, SAFE’s March 2018 [briefing memo](#) outlines the general consensus between NHTSA, the EPA,

²⁴ See, e.g., Anjali Raval: “A return to \$100 a barrel oil? — BofA,” Financial Times, May 10, 2018, and Alex Longley: “The \$100 a Barrel Oil Wager Comes Back to the Options Market.” Bloomberg. May 23, 2018

²⁵ SAFE: “Energy Security Has Improved But America Is Still At Risk.” Publication forthcoming.

and independent experts that lightweighting, when done properly, poses no overall increased risk to safety.²⁶ SAFE's literature review found that:

- NHTSA's own 2012 analysis acknowledges that reducing mass in the heaviest of vehicles, while leaving the mass of smaller vehicles unchanged, will reduce the overall risk of fatalities.²⁷
- The same analysis found that "any reasonable combination of mass reductions while holding footprint constant in MYs 2012-2016 vehicles—concentrated... in the heavier [pickup trucks] and limited in the lighter cars—would likely be approximately safety-neutral; it would not significantly increase fatalities and might well decrease them."²⁸
- A 2015 National Academy of Sciences study contracted by NHTSA found that making vehicles lighter, while keeping the size of their footprints constant, will increase safety for society as a whole—particularly if the greatest weight reductions come from the heaviest vehicles.²⁹

Most importantly, the emerging self-driving and driver assist technologies will add a new variable to this long-running debate. The overwhelming cause of most road fatalities in the U.S. is driver error.³⁰ As self-driving technology, which eliminates driver error and reduces accidents, becomes more prevalent, safety will improve.

IV. The Use of Off-Cycle Credits to Save Lives and Fuel

While the NPRM proposes to end or sunset all off-cycle credits, maintaining and reforming this part of the program could provide a better pathway to accelerating deployment of the technologies cited above. The EPA's off-cycle credit program should be reformed to expedite adoption of driver-assist technologies that save both lives and fuel, by streamlining driving patterns (e.g., finding more efficient routes, reducing inefficient stop-start driving patterns) and avoiding collisions which, in addition to resulting in injuries and fatalities, are among the most significant causes of congestion related fuel waste.

To achieve the goal of mitigating vehicle crashes while reducing oil demand, regulators should provide incentives for automakers to incorporate new self-driving and crash-avoidance technologies, which have been shown to reduce crash frequency, and therefore lower the risk of injuries and fatalities.

Independent research from the Boston Consulting Group concluded that universal adoption of existing crash-avoidance technologies could save 9,900 lives each year.³¹ A description of these technologies, which could also generate system-wide fuel savings of 18 to 25 percent, can be found in SAFE's April 2018

²⁶ EPA & NHTSA: "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards," Final Rule, October 15, 2012, at 62746.

²⁷ Ibid.

²⁸ Ibid.

²⁹ National Academies of Science: "Cost, Effectiveness, and Deployment of Fuel Economy Technologies for Light-Duty Vehicles," June 29, 2015, at 228.

³⁰ Bryant Walker Smith: "Human Error as a Cause of Vehicle Crashes," The Center for Internet and Society at Stanford Law School, December 18, 2013, <http://cyberlaw.stanford.edu/blog/2013/12/human-error-cause-vehicle-crashes>

³¹ Boston Consulting Group Inc. and Motor & Equipment Manufacturers Association: "A Roadmap to Safer Driving through Advanced Driver Assistance Systems," at 2, 2015, www.mema.org/sites/default/files/MEMA%20BCG%20ADAS%20Report.pdf

report, Using Fuel Efficiency Regulations to Conserve Fuel and Save Lives by Accelerating Industry Investment in Autonomous and Connected Vehicles.³²

SAFE recommends a 3-5 year pilot program that offers temporary credits in exchange for a commitment by automakers to provide comprehensive data on fuel savings to regulators to provide real data for future inclusion.

V. Response to Findings that Increased Vehicle Purchase Prices are Deterring New Buyers

The NPRM argues that fuel economy standards have increased vehicle purchase prices, so much so that consumers delay making new vehicle purchases.³³ The result, per the document, is a larger number of older vehicles on the road for longer. The NPRM estimates that compliance with the fuel economy standards, which increase in stringency through model year 2025, would eventually increase the purchase price of a vehicle by between \$1,800 and \$2,300.³⁴ This is higher than a January 2017 EPA estimate that forecast tailpipe emission standards would add a cost of \$875 per vehicle,³⁵ and another estimate from the Alliance of Automobile Manufacturers that approximated the cost of compliance at \$1,249 per vehicle.³⁶ In SAFE's view, the magnitude of range between these estimates warrant further clarification.

But regardless of cost, the historical context is instructive, especially in trying to assess how fuel economy technologies have contributed to and will contribute in the future to the increased price of vehicles.

- On a relative basis, cars have remained largely affordable over the past decade.
 - Inflation adjusted new car purchase prices have *fallen by three percent* since 2013 even as the total Consumer Price Index has risen by eight percent (see Figure 1 below). In contrast, housing has increased by 15 percent, food has risen by seven percent, and prescription drugs have risen by 19 percent over the same period.³⁷
 - It should be noted that the affordability of a car is complicated by interest rates and payment terms so it is always difficult to make an apples-to-apples comparison from year to year between the different variables that impact affordability. But, to date, fuel economy has not been a major driver in the increased vehicle price—with the cost of materials and consumer preferences for larger vehicles understood to be the primary drivers of price increases.³⁸

³² SAFE: "Using Fuel Efficiency Regulations to Conserve Fuel and Save Lives by Accelerating Industry Investment in Autonomous and Connected Vehicles," April 2018, secureenergy.org/report/avsandfuelconomy

³³ Proposed rule at 22.

³⁴ Proposed Rule at 667-668.

³⁵ EPA: "Final Determination on the Appropriateness of the Model Year 2022-2025 Light-Duty Vehicle Greenhouse Gas Emissions Standards under the Midterm Evaluation," January 2017, at 20.

³⁶ "Things to know about Trump's rollback of CAFE fuel-economy standards", CBS/AP, March 16, 2017

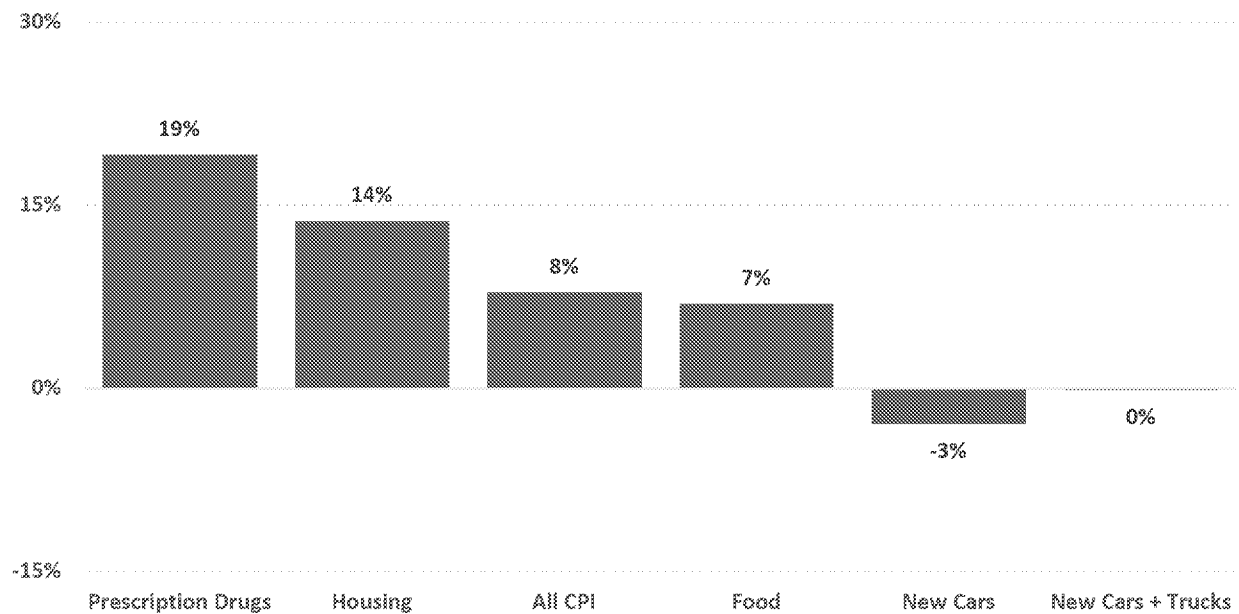
<https://www.cbsnews.com/news/trump-cafe-fuel-economy-standards-rollback/>

³⁷ Bureau of Labor Statistics, Consumer Price Index. May 24, 2018.

³⁸ Adrienne Roberts: "Auto Dealers Worry New Vehicle Prices May be Getting Too High," The Wall Street Journal, May 2018 <https://www.wsj.com/articles/auto-dealers-worry-new-vehicle-prices-may-be-getting-too-high-1522017100>; Sarah O'Brien: New-Car Shoppers: Brace Yourselves for Higher Costs," CNBC, April 2018.

<https://www.cnbc.com/2018/04/18/new-car-shoppers-face-higher-costs-from-auto-prices-loan-rates.html>

FIGURE 1: New Car Prices Changes Relative to Other CPI Components (April 2013 – April 2018)



Source: SAFE analysis based on data from the Bureau of Labor Statistics. June 4, 2018.

- The NPRM also states that cars are staying on the road longer, with the average age of cars on the road approaching 12 years, a historical high.³⁹ The implication is that cars are getting older because fuel economy regulations are making new cars too expensive for many drivers. The agencies should consider a few important factors when making this argument.
 - The United States has experienced a surge in new vehicle sales, which remain near record levels since the 2008 recession.⁴⁰
 - Improved durability of vehicles plays a role in why motorists are holding on to cars for longer.⁴¹ In fact,
 - The average age of a car driven in 2017 is six months more than in 2009. The average age of a car driven in 2009 was six months more than in 2001.⁴² Therefore, it seems unlikely that regulatory changes between 2009 and 2017 are causing Americans to drive older vehicles.
 - Consumer surveys by J.D. Power and Associates show that vehicle dependability has significantly improved, with the industry research group finding it is currently at its “best level ever.” Consequently, vehicles are holding their value for longer,

³⁹ Proposed Rule at 26.

⁴⁰ SAFE analysis based on data from U.S. Bureau of Economic Analysis.

⁴¹ IHS Markit: “Vehicles Getting Older: Average Age of Light Cars and Trucks in U.S. Again in 2016 to 11.6 Years, IHS Markit Says,” November 22, 2016, <https://news.ihsmarkit.com/press-release/automotive/vehicles-getting-older-average-age-light-cars-and-trucks-us-rises-again-2016>

⁴² SAFE analysis based on preliminary data from FHWA’s 2017 National Household Travel Survey.

and there is higher demand for used vehicles.⁴³ This increased dependability translates to longer on-road vehicle lifespans.

VI. Response to Estimated 500k b/d Increase in Gasoline Demand

The NPRM estimates that freezing the standards at 2020 levels will add approximately 500,000 barrels per day of gasoline demand in the United States by the early 2030s.⁴⁴

- The NPRM argues that policymakers must consider if energy conservation efforts are still warranted given changing oil market dynamics. Although true that surging U.S. production has altered the global balance of trade in petroleum fuels, the global nature of oil prices leave the United States exposed to oil market manipulation through non-free market actors, such as OPEC.
- Half a million barrels per day is a significant increase in gasoline consumption—volumetrically equivalent to over half of current crude oil imports from Saudi Arabia—that will impact the U.S. balance of trade and undermine efforts to reduce the oil intensity of the U.S. economy. Using the current gasoline price of approximately \$3 per gallon, this increase in consumption is equal to an additional \$24 billion in consumer spending annually—or \$122 billion from 2021 through 2025.⁴⁵
- Household spending on gasoline is now almost 20 percent higher than it was over the previous three years.⁴⁶ This incremental drain on household cash flow is meaningful.

VII. Alternative Fuel Vehicles and Fuel Diversity

The United States will not achieve energy dominance so long as the U.S. transportation sector remains so dependent on petroleum for all transportation without alternatives. Depending on petroleum for 92 percent of its energy needs,⁴⁷ the U.S. transportation sector is fully exposed to the effects of market manipulation by oil producers and traders. Protection from this dynamic can only be achieved through diversification of transportation fuels away from singular reliance on oil. Electric, hydrogen and natural gas vehicles provide an increasingly viable alternative to liquid fuels. While oil is a global commodity priced on an international market and controlled by foreign actors, electricity in particular is generated from a diverse portfolio of domestic fuels that are low and stable in price.

When coupled with autonomous vehicle technology, alternative fuel vehicles advance our progress towards the goal of energy dominance. For autonomous vehicle (AV) fleets that are emerging as the future of the transportation system, electric vehicles (EVs) will likely prove the best vehicle platform from an economic and technological perspective. Already, large companies working on AVs have voted with their wallets that EVs are the choice for AV deployment, with companies as diverse as Waymo, General Motors, and Zoox choosing EVs for their AV fleet.⁴⁸ EVs are the most commonly used platform for

⁴³ J.D. Power and Associates, “Most Owners Still in Love with their 3-Year-Old Vehicles, J.D. Power Finds.” February 14, 2018. <http://www.jdpower.com/business/press-releases/id-power-2018-us-vehicle-dependability-study>

⁴⁴ Proposed Rule at 2.

⁴⁵ Based on an average gasoline price of \$3.17 per gallon, per the reference case in EIA’s Annual Energy Outlook 2018: <https://www.eia.gov/outlooks/aeo/>.

⁴⁶ BEA. Personal Consumption Expenditures by Type of Product. (Table 2.4.5, line 111.)

⁴⁷ SAFE analysis based on data from EIA.

⁴⁸ See, e.g., Jaguar Land Rover: “Waymo and Jaguar Land Rover Announce Long-Term Partnership, Beginning with Self-Driving Jaguar I-PACE,” March 27, 2018, <https://media.jaguarlandrover.com/en-us/news/2018/03/waymo-and-jaguar-land-rover-announce-long-term-partnership-beginning-self-driving-0>

AV testing and development, with approximately 50 percent of companies permitted to test AVs on public roads using or plan to use electric vehicles as their main platform.⁴⁹ Industry analyses consistently point to the benefits of EVs as the underlying powertrain for autonomous vehicles, particularly in a fleet-based business model.⁵⁰ According to a study conducted by the Boston Consulting Group, the combination of ride sharing, driverless technology, and an electric powertrain will allow for savings of up to 50 percent compared to ICE-based vehicles.⁵¹ For these reasons, SAFE urges continued support for the nascent electric vehicle industry by maintaining the credit multiplier for electric and hydrogen vehicles through the 2026 rulemaking, which eases compliance for automakers by making each electric vehicle sold count twice towards meeting the standards.⁵² This provision should be continued to keep momentum towards the widespread adoption of electric vehicles. Upstream emissions from the electricity to power these vehicles should also continue to be counted as zero within the fuel economy program. This credit can be expanded to natural gas vehicles as well.

VIII. The Use of Fuel Economy Standards to Achieve Energy Dominance Goals

In the 2018 Annual Energy Outlook, the Energy Information Agency (EIA) projected that the United States will become a net exporter of petroleum and other liquids in 2022,⁵³ a milestone that will undoubtedly serve as a key pillar for Administration's goal of energy dominance. Fuel economy standards have played a significant yet unheralded role in aiding the transition of the United States from a net importer to a net exporter.

Lowering fuel economy standards would reduce U.S. petroleum exports and their attendant benefits. Based on EIA's high oil and gas resource and technology case, which predicts the 2021 transition to net exporter,⁵⁴ the Council on Foreign Relations forecasts American net exports to reach just 1.47 million barrels per day (Mbd) if fuel economy standards are frozen by 2030, compared to almost 4.2 Mbd under the current increasing standards.⁵⁵ Furthermore, in lower production scenarios, the United States does not reach net exporter status in the next decade if fuel economy standards are not maintained.⁵⁶

IX. Automakers Support a National Program

The NPRM preferred outcome is intended to lighten the burden of regulatory compliance for automakers,⁵⁷ but OEMs and the industry associations have expressed a preference for a resolution that

⁴⁹ SAFE analysis based on data from California Department of Motor Vehicles.

⁵⁰ See, e.g., Jaguar Land Rover: "Waymo and Jaguar Land Rover Announce Long-Term Partnership, Beginning with Self-Driving Jaguar I-PACE," March 27, 2018.

⁵¹ Brian Collie, Justin Rose, Rahul Choraria, & Augustin K. Wegscheider: "The Reimagined Car," Boston Consulting Group, December 18, 2017.

⁵² EPA & NHTSA: "2017 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions and Corporate Average Fuel Economy Standards; Final Rule," at 191.

⁵³ SAFE analysis based on data from EIA.

⁵⁴ *Ibid.*

⁵⁵ Dylan Yalbir: "Why Fuel Economy Standards Matter to U.S. Energy Dominance," Council on Foreign Relations (Mar. 13, 2018), available at www.cfr.org/blog/why-fuel-economy-standards-matter-us-energy-dominance.

⁵⁶ *Ibid.*

⁵⁷ Proposed Rule at 7.

maintains a unified standard for the federal government and California while also incorporating new technologies.⁵⁸

Such a resolution would also provide regulatory certainty for industry, which has benefited from a framework that brought together disparate interests and created predictability for automakers. A rulemaking that disrupts this certainty could lead to a protracted legal battle that would not only prove costly but saddle all stakeholders with years of uncertainty.

As the auto industry is in the midst of one of the most transformative periods in its history, such uncertainty could prove significantly detrimental to automakers and consumers. It is difficult for automakers to shape their fleets to comply with an uncertain regulatory framework. Moreover, that same uncertainty could delay deployment of new driver-assist technologies, with the potential to save both lives and fuel. Those technologies are poised to achieve mass-market penetration, but much slower without the incentive to develop and incorporate new technologies. Injecting unpredictability into the investment cycles of automakers—and upending the consensus on the links between fuel economy and safety—at this critical moment has the potential to not only set back safety and efficiency innovations, but also ultimately lead to higher prices for consumers.

X. Conclusion

An urgent need exists for policies to insulate the nation from our exposure to the opaque and unfree oil market, and to reduce the dependence on oil that has undermined the nation’s economic sovereignty, constrained our foreign policy, and burdened our military forces.

Continued economic growth and national security will depend in significant part on a clear fuel economy regulatory structure that prioritizes reduced exposure to global oil price volatility. SAFE looks forward to continuing its dialogue with the administration to develop a fuel economy program that meets these needs.

⁵⁸ See, e.g., Auto Alliance: “Automakers Respond to EPA and DOT Propose Fuel Economy Standards for MY 2021-2026 Vehicles,” August 2, 2018 <https://autoalliance.org/2018/08/02/automakers-respond-epa-dot-propose-fuel-economy-standards-2021-2026-vehicles/>